



**STATE OF MONTANA
MONTANA DEPARTMENT OF TRANSPORTATION
JOB PROFILE**



Update



Formal Review

Date Submitted 11/15/10

SECTION I - Identification

Working Title:

Enterprise Application Data Architect / Analyst

Department:

Montana Department of Transportation

Job Code Number:

151517

Division & Bureau:

Information Services Division
Technical Operations Bureau

Job Code Title:

Computer Systems Analyst

Section & Unit:

Program Management

Pay Band:

7

Work Address:

2701 Prospect Avenue Helena, MT 59620

Position Number:

81111

Phone:

444-



FLSA Exempt



FLSA Non-Exempt



Non-Union



MPEA



Blue Collar

Profile Completed By:

Kristi Antosh

Work Phone:

444-6274

Work Unit Mission Statement or Functional Description:

The Information Services Division (ISD) provides a full range of services for the Montana Department of Transportation (MDT). The bureaus within the division plan and set policy, and coordinate, design, install and maintain the department's information technology infrastructure, including network management, server systems administration, computer systems and database administration, applications development and maintenance, integrated systems development, Internet and Intranet development, data security & disaster recovery services, geospatial information systems (GIS), global positioning systems (GPS), and roadway information collection. ISD provides user support, training, imaging and duplication services, IT research and development, internal budgeting, procurement contract administration, and project management. The division includes the MDT Duplicating Services Section.

Describe the Job's Overall Purpose:

The Enterprise Application Architect works closely with business and technology counterparts to understand the enterprise objectives and initiatives and the impact on the application portfolio. He/she develops and maintains the enterprise application data model and is able to demonstrate the impact of new strategy implementations including, where necessary, the incorporation of data models from other State Agencies. The incumbent develops and maintains the business case and roadmap (project plan and interim architectures) that are aligned with the overall application portfolio to implement changes to the enterprise application architecture strategy. He/she develops documents and presents information to build consensus amongst business and technology counterparts regarding the enterprise application architecture; providing thought leadership on application architecture and conducting technical research to stay abreast of trends, points of view and new technologies that will improve the business or technology landscape at MDT.

SECTION II - Major Duties or Responsibilities

This section should be a clear concise statement of the position's major duties and the approximate percent of work time for each duty

A. Enterprise Application Analysis

70%

Serves as the Information Services Division's primary application portfolio manager. Gains and shares knowledge regarding the inter-relationships of all applications supported by MDT IS primarily through data models and/or process models as necessary. Shares information and knowledge throughout MDT and as appropriate with other State agencies for collaborative efforts. Specific duties include independently working with functional and business units to execute data collection and implement strategic initiatives and developing appropriate level data diagrams to support Enterprise information understanding.

1. Analyzing, designing, and documenting new Enterprise Application systems and/or enhancements to existing systems
2. Defining, reviewing and approving System Design specifications, process models, data architecture and/or data flow diagrams
3. Evaluating enterprise system integration and compatibility
4. Influencing final decisions that have a significant impact on at least one business unit
5. Providing analysis, recommendations, consultation and expert advice
6. Researching, analyzing, and recommending new technology, architecture, frameworks and products for complex application systems
7. Creating design specifications and documenting architectural artifacts
8. Lead creation of documentation of existing Application Architecture; create Architecture roadmaps incorporating technology refresh lifecycle, as well as application obsolescence
9. Provide consulting to business managers/business IT liaisons as well as business partners in defining reference architecture to support new and on-going projects
10. Ability to analyze business issues and come up with effective strategies for resolution

11. Performance of associated process studies, research investigations and requirements analysis
12. Maintains state-of-the-art knowledge and compiles information into recommendations and analyses
13. Looks across multiple applications to determine options and best strategies to connect systems together
14. Mentors and provides architectural advice to applications development teams
15. Creates and delivers presentations, communicating technical and highly complex information to management and public groups
16. With an understanding of the business domain and rationale, translates business strategy into a technical vision and strategy with a focus on developing an applications technology roadmap

B. Enterprise Level Project Management

30%

Manages major cross-divisional and/or cross-agency projects or programs. Ensures professional development processes are followed for each project; coordinates work with applications programmers, database administrators and system/operations personnel as necessary. Incorporates business applications users within MDT and when appropriate, across the state Enterprise.

1. Analyzes and evaluates Department needs, business processes, capabilities and limitations of various solutions, project development and implementation costs, and other factors to ensure that scope of work and project deliverables meet specific needs and requirements of Department staff and business systems.
2. Researches and analyzes State and Federal laws, rules and regulations to ensure that proposed projects comply with statutory regulations and requirements
3. Conducts cost-benefit analyses of proposed work orders and amendments to determine the most cost-effective approaches to meeting Department information system needs. Develops project cost projections based on previous expenses, new methods, and technologies, available resources and planned and active projects to maximize contract value
4. Provide cross-organizational (within MDT and with other State Agencies) collaboration program and project management
5. Applies an in-depth knowledge of project management concepts, practices and procedures
6. Works under demanding deadlines; acts independently, operating with only general direction
7. Explains and justify development strategies, requirements and alternatives to Department managers and other personnel. Ensures that system development plans meet the diverse and often conflicting needs and interests of the Department, the users (internal and external), and the Information Systems Division.

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1. ***The following duties and/or specific tasks listed under section II above are considered “essential functions” because they require specialized expertise and skill and are the primary reasons the job exists (they must be performed by this position with or without accommodations):***

The following mental and physical demands are associated with these essential functions:

PHYSICAL

- Sitting or standing for extended periods of time
- Use of standard computer and office equipment

MENTAL

- Analytical Thinking
- Managing multiple projects and priorities
- Critical Thinking
- Decision Making
- Communication: Written and Verbal
- Quality, Accuracy and Attention to Detail

2. ***Does this position supervise others?*** ☐ Yes ☒ No

Number directly supervised:

Position Number(s) of those supervised:

2. ***Attach an Organizational Chart.***

Attached

SECTION III - Minimum Qualifications - List minimum requirements for the first day of work.

Critical knowledge and skills required for this position:

KNOWLEDGE:

Extensive knowledge of the theories and developmental applications of computer science, including systems development, implementation, and management; data management products and tools; computer operating systems, finance, security-related functions and performance management principles. Project management also requires extensive knowledge of strategic planning principles, business process analysis, budgeting, and Department policies, procedures, and guidelines related to information systems development.

Project Management; Law and Government; Administration and Management; Customer and Personal Service; Transportation; Computers and Electronics; Engineering and Technology; Mechanical; Education and Training; Communications and Media; English Language; Public Safety and Security

SKILLS:

Program planning and implementation; negotiation and mediation; work planning; listening, trust building; data collection and analysis; program administration; and developing approaches to computer system issues with significant impact on agency business processes. Must manage complex and varied administration projects; develop project plans; and use various computer hardware, network, database, and data modeling tools, single and multiple-user computer systems, remote communication devices; Must have excellent technical, conceptual, analytical, and problem-solving skills in order to interact effectively with the full spectrum of contacts on an ongoing basis.

Additional Skills in: Active Listening, Social Perceptiveness, Coordination, Operations Analysis, Technology Design, Programming, Troubleshooting, Systems Analysis, and Systems Evaluation

Behaviors required to perform these duties:

See MDT Core Behaviors

In addition to MDT Core Behaviors, this position requires the following behaviors:

Plan, Organize, Gather Information and Conduct Research

Define an end result. Set or follow a course of action to achieve it. Anticipate potential obstacles and monitor progress. Organize tasks into component parts in a rational, methodical way. Collect and use relevant information, data, and opinions.

Take a Reasonable, Logical Approach to Solving Problems

Assess situations in a logical and methodical way based on facts. Seek root causes. Recognize patterns, connections, themes, and issues. See implications and consequences of a situation or information. Develop feasible solutions based on logical assumptions and factual observation that reflect consideration for resources, constraints, organizational values and goals.

Prioritizing, Multi-tasking, Balancing Multiple Projects

Recognize or establish the relative importance of multiple issues, tasks, and opportunities to maximize the productivity of the organization.

Quality, Accuracy, Attention to Detail

Achieve excellent work results by attending to details. Demonstrate an appropriate level of precision to complete projects successfully and to execute job responsibilities in a timely manner.

Results Oriented

Achieve goals and bring projects to completion. Investigate, calculate, and proceed through a project or task to bring about a conclusion. Persist and stay focused when faced with a series of challenging or uncertain situations. Demonstrate a concern for working well or for competing against a standard of excellence.

Provide Analytical Thinking and Deductive Reasoning

Uses logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems, work tasks and strategies; able to demonstrate that conclusions reached utilizes previously known facts such that the individual can quickly eliminate possible causes (and solutions).

Personal Accountability and Ownership

Accepts individual responsibilities for all actions taken; Reliable – honors commitments; is self-motivated yet is able to take direction from supervisor or senior team members. Able and willing to align behavior with the needs and goals of the organization and provide a visible role model for others. Holds

self-accountable for organizational activities, services, decisions, successes and failures, and subsequently performs the job with broader goals in mind.

Listening

Give full attention to and make a conscious effort to hear other's ideas, concerns, questions, and issues with interest, empathy, and objectivity. Paraphrase and ask questions to ensure understanding of the message when required.

Reading Comprehension

Demonstrates ability to take information provided in manuals and convert it into identifiable actionable steps. Successfully reviews white papers, technology updates and provides synopsis for management decisions.

Decision Making

Makes decisions in a timely fashion and recognizes when the decision making level is not theirs. Able to analyze all information, organize thoughts, consider the cause and effect for each decision and document the final decision. Expresses and presents the final decision to management and/or the user community. Challenges the status quo by taking calculated actions in complex, ambiguous, contentious, or hazardous situations to force an issue or set a direction.

Responsiveness, Follow up

Assumes responsibility for and delivers on commitments to the customer. Initiates contacts to clarify issues or problems in a timely manner. Keeps the customer up-to-date about projects.

Critical Thinking and Inductive Reasoning

Use a disciplined process of actively conceptualizing, analyzing, and applying information as a guide to action. Applies that thought process whether pursuing issue resolution, making recommendations and/or seeking strategic vision opportunities. Utilizes inductive logic based on a small number of observations or experiences to determine whether the likelihood of something happening is sound such that the individual can predict outcomes, is more able to estimate timetables, etc.; forms relationships between seemingly unrelated events.

Understanding, Sensitivity, Trust Building

Interact openly and honestly. Encourage others to express viewpoints. Listen and respect different viewpoints. Address misunderstandings directly with those involved. Maintain confidences. Demonstrate an awareness of nonverbal as well as verbal communication. Elicit trust from others by showing honesty, reliability, and integrity.

Speaking Effectively

Express and present thoughts and ideas clearly, succinctly, and in an understandable manner individually and in a group. Adjust language, delivery, or terminology to meet the needs of the audience. This competency includes any type of verbal communication such as giving presentations, providing training, giving testimony, speaking in person or by phone.

Writing Effectively

Express and present information and ideas in writing which is clear, succinct, and understandable. Adjust the language, writing style, and terminology used to meet the need and level of understanding of the reader. Utilize knowledge of the structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar. (This competency includes any type of formal or informal written communication: i.e. letters, reports, studies, presentations, articles, rules, policies, procedures, and manuals.)

Influence and Persuasion

Transfers thought into productive action. Creates successful outcomes by sharing knowledge and information within the work unit and across organizational lines. This includes mentoring others, building relationships key to success by establishing trust, credibility and rapport with key players and customers. These employees use awareness of the organization (i.e. structure, centers of authority, decision making roles) and knowledge of the different roles and power positions within the organization to positively affect results.

Team Building

Stays focused to achieve results. Actively participates and respects the ideas of others. Looks for alternative ways to work with others that will create better results and working relationships. Motivates team members with diverse goals to collaborate and cooperate to achieve success.

Change Agent

Engages others in order to develop innovative solutions. Introduces new ways of thinking and behaving. Introduces new technology and tools. Encourages innovation and implements nontraditional ideas. Creates and implements new concepts, models, theories and relationships to address work in new ways; motivated others to seek best practices.

Initiative

Focuses efforts and energy on successful attaining organizational goals and objectives. This includes making difficult decisions and persisting even when confronted by obstacles or adversity and may involve questioning status quo assumptions. Assume accountability for decisions, actions and results, follow through on issues to completion, point out problems and ask questions others may have overlooked or been reluctant to acknowledge. Requires an understanding of organizational relationships, identification of decision makers and the relationship of positions within the agency.

Judgment/Decisiveness

Commits to a sensible, logical and effective action after considering alternative actions and their consequences on the resources, constraints and values of an organization. Makes decisions that reflect professional conviction and accountability in a timely fashion. Makes valid assumptions when information is unclear or lacking.

Leadership

Shares information, feedback and knowledge (two-way communication) with key persons inside and outside of the organization to ensure successful project outcomes and/or improvement. Includes training, teaching and coaching others. Actively steps into a leadership role.

Demonstrate Flexibility

Modifies ideas, strategies, approaches and/or styles to reach a goal in light of changing circumstances; maintains effectiveness in varying environments and with different tasks, responsibilities and people; adapts actions to meet desired business results.

Relationship Building

Builds short and long-term relationships with people critical to work and project success; builds constructive and effective relationships with internal and external customers. Is respected as a valid resource through consistent actions and behaviors; builds the appropriate rapport required to do business. Openly demonstrates an understanding of and respect for the value of coworkers' contributions to the MDT mission. Makes appropriate or acceptable compromises in order to meet goals and to gain cooperation from others

Education:

Check the one box indicating minimum education requirements for this position for a new employee the first day of work:

- | | |
|---|--|
| <input type="checkbox"/> No education required | <input type="checkbox"/> Related AAS/2-years college/vocational training |
| <input type="checkbox"/> High school diploma or equivalent | <input checked="" type="checkbox"/> Related Bachelor's Degree |
| <input type="checkbox"/> 1-year related college/voc. training | <input type="checkbox"/> Related Master's degree |

Please specify the acceptable fields of study:

Acceptable: Computer Science or Information Systems

Other education, training, certification, or licensing required (specify):

Experience:

Check the one box indicating minimum work-related experience requirements for this position for a new employee the first day of work:

- | | |
|---|---|
| <input type="checkbox"/> No prior experience required | <input type="checkbox"/> 3 years |
| <input type="checkbox"/> 1 year | <input type="checkbox"/> 4 years |
| <input type="checkbox"/> 2 years | <input checked="" type="checkbox"/> 5 or more years |

Other specific experience (optional):

- Bachelor's degree in Computer Science or Information Systems and a minimum of six years of related IT experience.
- Related experience includes: including in-depth knowledge of application development technologies, tools, and methodologies including solid project management; strong understanding of how technology relates to business, differing markets and industries and applies knowledge to support the needs of critical systems and projects; specific experience in business process analysis along with advanced knowledge of and proficiency with several domains or technical platforms and disciplines is required. Other experience requested is a demonstrated ability to translate highly complex and ambiguous problems into actionable components and lead the solutioning efforts; experience with blueprinting and developing conceptual, logical and technical architecture data models at the enterprise level. Proven ability to provide technical leadership and command respect at all levels of the organization.

Alternative Qualifications:

This agency will accept alternative methods of obtaining necessary qualifications.

☒ Yes ☐ No

Alternative qualifications include:

- Unrelated Bachelor's Degree and eight years of related IT experience
- AA/AS Degree in a related field (computer technology, business information systems, computer science) and eight years of related IT experience
- Unrelated AA/AS degree and ten years of related IT experience
- 12 years related experience

SECTION IV – Other Important Job Information

☐ Fingerprint check

☐ Valid driver's license

☐ Background check

☐ Other; Describe

Other information including working conditions such as shifts, lifting requirements, travel or hours.

SECTION V – Signatures

Signature indicates this statement is accurate and complete.

Employee:

Name: _____ Title: _____

Signature: _____ Date: _____

Immediate Supervisor:

Name: _____ Title: _____

Signature: _____ Date: _____

Bureau Chief:

Name: _____ Title: _____

Signature: _____ Date: _____

Division/District Administrator:

Name: _____ Title: _____

Signature: _____ Date: _____

Department Designee:

Jennifer Jensen/Designee

Chief Human Resources Officer
Human Resources Division

Signature: _____ Date: _____